



## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[20-096]

### Notice of Centennial Challenges Break the Ice Lunar Challenge Phase 1

**AGENCY:** National Aeronautics and Space Administration (NASA).

**SUMMARY:** The Break the Ice Lunar Challenge is open and teams that wish to compete may now register. Centennial Challenges is a program of prize competitions to stimulate innovation in technologies of interest and value to NASA and the nation. The Break the Ice Lunar Challenge is a prize competition with up to a \$5,000,000 USD total prize purse to incentivize innovative approaches for excavating icy regolith and optimize logistics to transport acquired resources, primarily water, in extreme lunar environments. At this time, NASA is opening Phase 1 of the competition, which has a \$500,000 USD prize purse. In this phase of competition, teams will design a system architecture to excavate icy regolith and deliver water on the lunar surface in a hypothetical mission scenario based on anticipated mission operations and environmental features of human and robotic exploration of the lunar surface. NASA is funding the prize purse and administration of the challenge competition.

**DATES:** Phase 1 registration opens November 18, 2020, and will remain open until June 18, 2021. No further requests for registration will be accepted after this date.

Other important dates:

November 18, 2020	<ul style="list-style-type: none"><li>• Phase 1 registration opens</li></ul>
June 18, 2021	<ul style="list-style-type: none"><li>• Deadline for registration</li></ul>
August 13, 2021	<ul style="list-style-type: none"><li>• Phase 1 winners announced</li></ul>

**ADDRESSES:** The Break the Ice Lunar Challenge Phase 1 will be conducted virtually. The Challenge competitors will develop and submit system architecture, excavation plan and other submission elements from their own location.

**FOR FURTHER INFORMATION:** To register for or get additional information regarding the Break the Ice Lunar Challenge, please visit: [www.nasa.gov/breaktheice](http://www.nasa.gov/breaktheice). For general information on the NASA Centennial Challenges Program please visit: <http://www.nasa.gov/challenges>. General questions and comments regarding the program should be addressed to Monsi Roman, Centennial Challenges Program, NASA Marshall Space Flight Center Huntsville, AL 35812. Email address: [hq-stmd-centennialchallenges@mail.nasa.gov](mailto:hq-stmd-centennialchallenges@mail.nasa.gov). Phone: 256-544-4071.

## **SUPPLEMENTARY INFORMATION:**

### **Summary:**

Phase 1 of the Break the Ice Lunar Challenge is focused on incentivizing new ideas and approaches to a system architecture for excavation and movement of icy regolith and water on the lunar surface. The Challenge describes a hypothetical Mission Scenario and asks Teams to design a system architecture addressing necessary hardware, concept of operations, lunar environmental conditions, and specific performance analyses, as well as supporting materials that address credibility and feasibility of the system architecture. In Phase 1, Teams will have approximately seven (7) months to register and submit a system architecture. Phase 1 will last a total of nine (9) months, including approximately two (2) months of judging.

### **I. Prize Amounts**

The Break the Ice Lunar Challenge total prize purse is up to \$5,000,000 USD (five million dollars) to be awarded across two (2) phases of competition.

Prize purse for Phase 1 will total up to \$500,000, with the following prize distribution: 1<sup>st</sup> place \$125,000, 2<sup>nd</sup> place \$75,000, 3<sup>rd</sup> place \$50,000, and up to ten (10) runners-up teams will receive up to \$25,000 each as determined by the judging panel.

The Prize Purse for Phase 2, should there be promising submissions in Phase 1 that demonstrate a viable approach, will be worth up to \$4,500,000.

### **II. Eligibility**

Eligibility to Participate and Win Prize Money

To be eligible to win a prize:

- Individuals must be U.S. citizens or permanent residents of the United States and be 18 years of age or older.
- Organizations must be an entity incorporated in and maintaining a primary place of business in the United States.
- Teams must be comprised of otherwise eligible individuals or organizations and led by an otherwise eligible individual or organization.
- Team leader must be a U.S. citizen or permanent resident.

The eligibility requirements can be found on the official challenge site: [www.nasa.gov/breaktheice](http://www.nasa.gov/breaktheice)

### **III. Rules**

The complete rules for the Break the Ice Lunar Challenge, can be found

at: <https://breaktheicechallenge.com>

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